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EXAMINER

KUMAR, PREETI

ART UNIT PAPER NUMBER

1751

DATE MAILED: 07/18/2003

17

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/902,256

Applicant(s)

ICHIMURA ET AL.

Examiner

Preeti Kumar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Non-Final Rejection

1. Claims 17-28 are pending.

Response to Amendment

1. The rejection of claims 17-22 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hojo et al. (US 5,824,113) are maintained for the reasons recited in the final action paper no. 9 dated November 29, 2002.

2. The rejection of claims 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hojo et al. as applied to claims 17-22 above, and further in view of Thorsen (US 4,189,303) are maintained for the reasons recited in the final action paper no. 9 dated November 29, 2002.

3. The provisional rejection of claims 23-28 under 35 U.S.C. 101 as claiming the same invention as that of claims 1-7 of copending Application No. 09/721,772. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Response to Arguments

4. Applicant's arguments filed April 28, 2003 have been fully considered but they are not persuasive. Applicants urge that Hojo et al. teach a process that peels off keratin layers such as the epicuticle layer and exocuticle layer. However, the wool sliver taught by Hojo et al. is treated by oxidation and further teach that the oxidation decomposition is localized in the under keratin layers which are adjacent to the keratin

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layers of the scales and that non-keratin protein parts are, in view of the fact that it is jointed to the inner parts of the fiber, maintained as they are. See col.2, ln.24-29 and col.3, ln.20-26. The knitted product taught by Hojo et al. exhibited shrink resistant properties as well as the strength and stretch-ability better than those of the similar wool products. See example 3, col.8, ln.1-19. Furthermore, arguments or conclusionary statements unsupported by factual evidence are insufficient to establish unexpected results. See *In re Linder*, 173 USPQ 356 (CCPA 1972).

5. The declaration under 37 CFR 1.132 filed March 31, 2003 is insufficient to overcome the rejection of claims 17-28 based upon the prior art rejection with Hojo et al. (US 5,824,113) as set forth in the last Office action because the declaration is not commensurate in scope with the material limitations of the instant claims. Specifically, the declaration is not commensurate in scope with the material limitations of independent claim 17. The instant claim recites an animal fiber having scales and being oxidized to a specific degree, having a specified absorption band, and specified shrinkage rate and other properties that are not illustrated or mentioned in the evaluation provided in the declaration. The evaluation of the fibers is based solely on the observation of scales, water repellency, and existence of epicuticle layer. Thus, the declaration is not commensurate in scope with the material limitations of the claims. Furthermore, table 1 and figure 3 in the declaration illustrate three samples of wool fiber, however it is not seen how the present invention is novel or different over the non-treated wool fiber. Also, the magnification of the epicuticle layer illustrated in the

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images in figure 3 are not provided. Thus, drawing conclusions from these images is improper.

6. Applicant further has not provided any arguments supporting the traversal to the double patenting rejection, thus it has been maintained.

New Grounds of Rejection

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 17-28 are rejected under 35 U.S.C. 103(a) as obvious over Russell et al. (US 5,928,383).

Russell et al. teach a method for treating proteinaceous materials that contain disulfide or polysulfide bonds to improve their performance at high relative humidity and when wet. The method comprises annealing the fabric at a temperature in the range of from 70.degree. C. to 160.degree. C. at a regain of between 10% and 25% for a period

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greater than about 10 minutes wherein the fabric is annealed in the presence of a gas or a liquid which enhances the disulfide interchange reaction. The present method is particularly applicable to keratinous materials such as for example wool, wool with reduced crystallinity, mohair, regenerated protein, or mixtures thereof. See abstract.

Russell et al. teach that the enhancement of the disulfide interchange reaction and subsequent crosslinking during annealing lowers the total amount of water which may be absorbed by the proteinaceous material (saturation regain). Accordingly, the undesirable changes to the properties of the material on transformation to the "rubbery" state are avoided. This provides an improvement in the wet, or high relative humidity, properties of the proteinaceous materials. Properties such as wet modulus, wrinkle recovery etc. are thereby improved. In certain embodiments of the present invention permanent setting properties of fabrics made from these proteinaceous materials (permanent press) are also improved. See col.2, ln.64 to col.3, ln.12.

Russell et al. teach that the oxidation or blocking of excess thiols after annealing enhances the disulfide interchange reaction. This can be achieved by any reaction to remove or convert thiols to species that do not catalyze the disulfide interchange reaction. Numerous compounds are available to achieve this, for example, hydrogen peroxide, peracids, acrylonitrile, formaldehyde, benzoquinone, ethylene oxide, ozone, oxygen, epoxypropane, butadiene diepoxide, butadiene monoxide, or trimethylene oxide. This reaction may be carried out in the gas phase, in solvents including water or if desired by using an aerosol of the required chemical. By way of example, acrylonitrile, hydrogen peroxide, peracetic acid, oxygen and benzoquinone are exemplified

hereunder. Other treatments are of course possible and may include reactive nucleophiles which react to form additional crosslinks or to replace existing crosslinks with more stable ones, for example, the disulfide crosslink may be replaced by the more stable lanthionine crosslink by reaction with cyanide. See col.7, ln.23-40. Example 2 shows the reduction in saturation regain that can be obtained by the introduction of additional thiols prior to annealing. See col.10.

Russell et al. do not specifically teach an animal fiber with scales in original forms having a specific rate of shrinkage, coefficient of friction, and degree of oxidation of a cystine bond as recited by the instant claims. However, it would have been nonetheless obvious to one of ordinary skill in the art, at the time the invention was made to arrive at an animal fiber with scales in original forms having a specific rate of shrinkage, coefficient of friction, and degree of oxidation of a cystine bond, because the teachings of Russell et al. suggest a method for treating proteinaceous materials that contain disulfide or polysulfide bonds to improve their performance at high relative humidity and when wet.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Preeti Kumar whose telephone number is 703-305-0178. The examiner can normally be reached on M-F 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra N. Gupta can be reached on 703-308-4708. The fax phone numbers for the organization where this application or proceeding is assigned are 703-

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872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-872-9309.

Preeti Kumar
Examiner
Art Unit 1751

PK
July 11, 2003



YOGENDRA N. GUPTA
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